LUNAR *NEWS*

No. 63 September 1998

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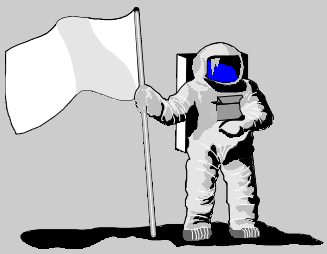

Lunar News Mission

The purpose of "Lunar News" is to provide a newsletter forum for facts and opinions about lunar sample studies, lunar geoscience, and the significance of the Moon in solar system exploration.

Editor's Notes

"Lunar News" is published by the Planetary Missions and Materials Branch, Earth Science & Solar System Exploration Division, Johnson Space Center of the National Aeronautics and Space Administration. It is sent free to all interested individuals. To be included on the mailing list, write to the address below. Please send to the same address any comments on "Lunar News" or suggestions for new articles.

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Meet the Staff!

Sue Goudie was one of three children born in Osawatomie, Kansas, to Harold and Violette Thompson. She has one brother and a sister. She began her career as a stenographer during her senior year of high school. Sue married a classmate four years later who had finished ROTC and was looking forward to an Air Force career.

The next four years they moved around a lot. They started their life in California working briefly at Rocketdyne for Rockwell Engineering. Then it was off to San Antonio, Texas, to be inducted into the Air Force followed by flight school in Barstow, Florida. From there they moved to Spokane, Washington and then back to California to the growing aerospace industry. Their daughter Kathy was born there. On the go again they moved to San Diego, headquarters for General Dynamics, to install silos for the missiles throughout the U.S. and were eventually assigned to Plattsburgh, New York, where son Tom was born. Their next moves took them to Huntsville, Alabama, New Orleans, Louisiana, and finally back to the San Fernando Valley of California with Northrop Aviation. When the aerospace industry ignited in order to get a man on the Moon, they were sent to Houston, Texas. The children were school age and Sue was kept busy with carpooling, homework, PTA, Brownie Scouts,

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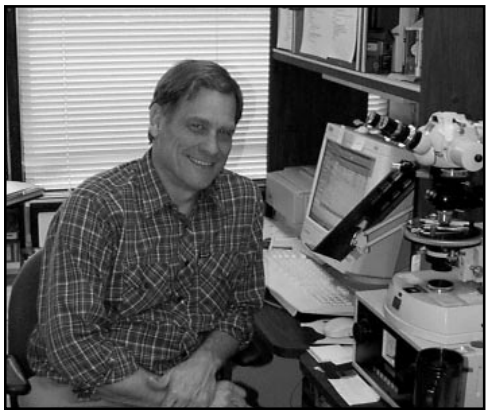

Curator's Comments

Gary Lofgren
NASA JSC

Eight months have gone by and I am feeling more like a curator. This job has more to it than one ever sees. Much is happening. We are circling the Moon and gathering new data that will enhance our global knowledge of that body. Integrated with the Galileo and Clementine data, it will provide the basis for a new round of global lunar investigations. There remains the possibility that frozen water exists in the permanently shadowed lunar poles. If water is present it changes how we view the moon as a future outpost for space exploration. There will be a conference this month based on a CAPTEM initiative "New Views of the Moon Enabled by Combined Remotely Sensed and Lunar Sample Data Sets" to examine the new data from the moon collected by the Galileo and Clementine missions.

In the category of new planetary samples, we are preparing to receive solar wind samples collected on the Discovery program, Genesis mission. We are modifying a portion of our facility to install a class 10 clean room. CAPTEM is overseeing the modifications and Larry Nyquist is heading up a renewed "Facilities Subcommittee" to advise us on future curation matters. Their immediate job is to monitor the current construction and insure that the process does not contaminate the rest of the building and the new facility meets our high standards. Lunar processing will be suspended during this construction period. Requests submitted to the CAPTEM meeting in November will be processed as soon as the construction is completed.

Two of our staff have retired, Ed Cornitius after 30 years on the job. I remember Ed working in old LRL when I first came to work here. Gee that's a long time ago. Rita Sosa has also retired. Both will be missed.

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ballet lessons, Little League ball and the usual motherly tasks.

As the children grew, Sue felt a need to re-establish her career. She began her second career working part-time in a doctor's office. In 1972, she joined the aerospace workforce at the Bendix Aerospace Field Office. The assignment in the Houston office was primarily to track the ALSEP monitoring equipment which had been left on the moon. When the tracking signals faded away Sue moved on to Northrop Services, Inc. working at JSC in lunar sciences. She typed scientific papers and lunar sample catalogs and later moved to the Meteorite Processing Laboratory where they monitored the receipt of meteorites from the Antarctic expeditions, and prepared allocations of samples for scientific investigators. Layoffs forced a transfer to Northrop's main office. She worked there for over four years.

Deciding that aerospace was an unstable field, Sue took a position at University of Texas Medical Branch (UTMB) in the Equal Opportunity Employment office. She worked there for a year but there was no excitement in coming to work each day with no special goals to look forward to. She went to work for General Electric as an administrative assistant to the Business Manager. Sue worked there for three years until coming to work for Lockheed Martin at JSC with many former co-workers.

Sue works in the Sample Information Center and is responsible for monitoring Lunar samples, Cosmic Dust and Antarctic meteorites as they are allocated to scientific investigators. They prepare and process accountability records and monitor educational packages loaned to principal investigators, colleges and universities. They also receive and document all returned samples from scientific investigators.

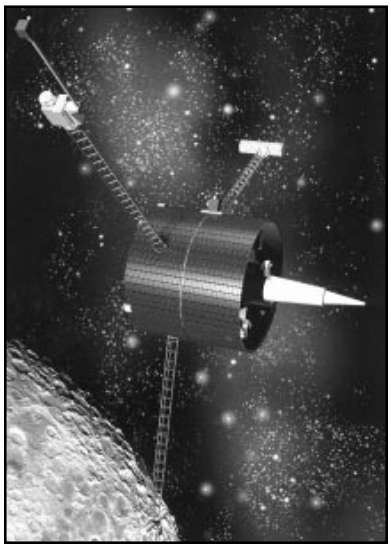
Sue is certainly an asset to the high quality of work that is produced in the Sample Information Center. Our hats off to Sue for a job well done.

Prospector's Grand Finale

by John E. Gruener
Hernandez Engineering

As *Lunar Prospector's* primary mapping mission begins to wind down, Dr. Alan Binder and his co-investigators are already in the final stages of planning the second phase of this already very successful mission (see the September 4 issue of *Science* for the latest scientific results). This second phase, sometimes referred to as the 'extended mission,' will involve lowering the orbital altitude of *Lunar Prospector* to obtain data with better spatial resolution and higher sensitivity. However, before this second phase begins, *Prospector* will be commanded to perform several maneuvers.

Lunar Prospector continues to orbit the Moon in a 100 km circular polar orbit, with the spacecraft spin axis roughly perpendicular to the ecliptic plane. *Prospector's* current attitude, and the attitude it has been in throughout the mission, is such that when it is over the Moon's north pole, the white conical communications antenna points away from the lunar surface (in the 'plus Z' direction), and the blunt end, or bottom, of the spacecraft faces the Moon. On October 5, a two step process will flip *Prospector* 180 degrees. First, the spin axis will be rotated 90 degrees such that *Prospector's* three booms will 'roll' around the Moon, as if they were spokes on a wheel. Then on October 12, *Prospector* will be rotated another 90 degrees and it's spin axis will once again be perpendicular to the ecliptic, though the spacecraft will now be 'upside down.'



This is being done so the *Prospector* science team will better understand the response function of the science instruments. Though the instruments don't need any pointing, hence their compatibility with a spinning spacecraft, their data do exhibit non-symmetric responses which vary with latitude. Computer modeling can account for these responses, but the science team would like the chance to verify the modeling with data collected from a different spacecraft-instrument-Moon geometry. Also, the south-facing, or 'minus Z,' face of the alpha particle spectrometer (APS) was damaged before reaching the Moon (probably during separation from the trans-lunar injection stage), and thus the high northern latitudes and polar region of the Moon have less 'alpha coverage' than the rest of the lunar surface. Flipping the spacecraft will allow the opposite, or 'plus Z,' face of the APS to better map the alpha particles coming from the northern regions. Finally, during the Leonid meteor shower, the bottom of the spacecraft will be pointed in the direction of the oncoming particles to protect the electronics and solar arrays from critical damage.

On December 19, *Prospector* will perform several maneuvers that will lower its orbit to a circular altitude of 40 km above the lunar surface. It will remain in this orbit for about a month so that Binder and the others can be certain that the updated lunar gravity model (made with *Prospector* data collected earlier in the mission) accurately predicts *Prospector's* orbital motion. Once comfortable with the spacecraft's performance and the gravity model's accuracy, *Prospector* will be

commanded in mid-January to again lower it's orbit, this time down to a final altitude of 25 km above the lunar surface. At this altitude, the spatial resolution of the neutron, gamma ray, and alpha particle spectrometers will be approximately 40 km (as compared to the 150 km resolution during the primary mapping altitude of 100 km). Also, the sensitivity of the gravity and magnetic experiments will increase with the square and the cube of the spacecraft's altitude, respectively. So, when *Prospector's* altitude decreases from 100 km to 25 km (a four fold decrease), the sensitivity in the gravity data will increase by 16 times, and the magnetic data will have 64 times better sensitivity.

Of course, at an altitude of only 25 km above the lunar surface, the gravitational perturbations to *Prospector's* orbit will be great and the circular orbit will quickly degenerate into an elliptical one. Current modeling of the orbit suggests that within two weeks the orbit should be a 10 x 40 km ellipse. At that time, orbital adjustment maneuvers will be performed, raising *Prospector's* orbit back to a circular altitude of 25 km. This two week cycle will continue until all of the onboard fuel is spent (or until the mission runs out of money, which ever comes first). Once *Lunar Prospector* loses the ability to reboost its orbit or control its attitude, the inevitable impact into the lunar surface will quickly follow. Current predictions have this impact occurring sometime in July 1999. When all is said and done, *Lunar Prospector* will have orbited the Moon more than 5000 times.

For the engineers and politicians in the space exploration community, *Lunar Prospector* will be remembered for many things; simple design, low cost, quick production schedule, small work force and streamlined management style, and maps of potential lunar resources for use in future explorations of the Moon. However, in the planetary science community, the real legacy of *Lunar Prospector* will be its scientific data sets, which will continue to be refined and studied for many years. Correlations between the lunar samples gathered during the Apollo program and *Prospector's* remote sensing data will play an integral role in the efforts to better understand our nearest planetary neighbor. One can only hope that the recent success of the *Lunar Prospector* and *Clementine* missions will rekindle interest in the Moon, and set the stage for our return to the lunar surface in the 21st century.

You can follow the Lunar Prospector mission at:

http://lunar.arc.nasa.gov

Astromaterials at JSC

by Doug Blanchard
NASA JSC

We are please to announce the addition of Dr. Carl Agee to the Johnson Space Center staff. Carl is a experimental petrologist who is bringing his high pressure, high temperature laboratory along with him from Harvard to JSC. In our search for a new curator (Jim Gooding resigned a year ago), it became evident that the whole area of "astromaterials" needed more emphasis at JSC. Our Center Director, George Abbey, asked the astromaterials community to find a Chief Scientist for Astromaterials for JSC. Carl Agee fills that bill exceedingly well. Carl is on Mr. Abbey's staff, and his office and lab are located in the Earth Science & Solar System Exploration Division. One of Carl's first tasks is to resume our search for the Astromaterials Curator who will lead the curatorial activities including our preparations for *Genesis*, *Stardust*, and Mars samples. We expect the search to be successful within the next few months and the transition will be completed.

CAPTEM Facilities Subcommitee

By Larry Nyquist
NASA JSC

NASA plans to return extraterrestrial samples from several missions occurring in rapid fire succession early in the next century. The first such samples will be of the solar wind implanted into ultrapure materials (primarily silicon wafers with some diamond, Al, Au, Ge) during the Genesis Mission (PI: Don Burnett), and to be returned in August of 2003. Next in sequence will be samples of cometary dust captured in aerogel during the Stardust Mission (PI: Don Brownlee) and returned in 2006. Soon thereafter will follow Martian samples to be returned in 2008. The Curatorial Office has traditionally solicited advice from the scientific community on the best use of existing facilities, or requirements for new facilities, to meet the twin requirements of protecting the extraterrestrial samples entrusted to its care while processing them for scientific study by qualified investigators. This advice has most often come from CAPTEM and it predecessor committees. Occasionally, when facilities-related questions have been most urgent, a special facilities subcommittee has been formed, as in the case of the Facilities Subcommittee of LAPST which provided oversight during the construction of the Lunar Curatorial Facility, Building 31N.

In light of the need for long lead-time decisions concerning the facilities required for the upcoming sample return missions, CAPTEM has reconstituted a facilities subcommittee to advise the Curatorial Office on ways to best prepare for the curation of future extraterrestrial samples (especially Martian samples) while maintaining the integrity of existing sample collections. Membership of the current subcommittee consists of Larry Nyquist (Chair); Don Burnett, Dimitri Papanastassiou, Clive Neal, and Bill Parkan (Ex Officio). Larry and Dimitri served on the original LAPST committee, Don represents the Genesis Mission, Clive represents the parent committee, and Bill was the User Representative during construction of B31N, and brings invaluable engineering expertise and experience to the subcommittee. The subcommittee met for the first time July 17-18, 1998 to review plans for renovation of B31N for the Genesis Mission and to draft a charter for its activities. The report of the subcommittee, consisting of approval of the plans for renovation of B31N and detailed recommendations for their implementation, as well as a proposed charter for the subcommittee's activities, will be reviewed by CAPTEM at its November meeting.

Building 31 N, Lunar Sample Facility, NASA JSC.

JSC Open House

The Johnson Space Center opened its doors to the public on August 29, 1998. It was attended by ~70,000 folks from the Houston area. One of the highlights of the day was the Astromaterials exhibit featuring a lunar rock and the hands-on display with a gloved nitrogen cabinet.

SAFETY FIRST

Chuck Landrum, II is the Lockheed Martin Safety Engineer for the Basic and Applied Research Department. Among many, his duties includes performing safety inspections for the Lunar Curatorial Facility and areas in sample curation. Since this is a clean facility, he rarely, if ever, finds any safety problems. He looks for tripping hazards, damaged wiring, sharp edges, UL listed equipment and any other hazards. There are no hazardous chemicals in the lunar processing laboratories, so this decreases the possibility of mishaps of this sort. He does a safety inspection of the entire facility every two months. Everyone is accountable for safety responsibilities and should become involved in identifying any hazards so that they can be eliminated.

Foremost, Chuck wants everyone to understand the JSC safety policy. To date, he is very pleased with the condition of the Lunar facilities. We welcome Chuck and challenge him to help us, as always to keep safety first and up front.

Lab Tours

Above: JPL Planetary Protection Team; Darrell Jan, Patricia Beauchamp, Eileen Stansbery, Carl Agee, Ken Nealson and Gary Lofgren.

Above: Tom Enright, Astronaut Joe Edwards, Dale Holran, Dan Silberman, and Scott Stewart.

Above: MSHARP Committee Inspection Tour; Jim Papike, Ben Clark, Don DeVincenzi, Don Bogard, Mike Carr, Doug Blanchard, Gary Lofgren, Mark Adler, and Tommy Thompson.

Above: 1998 summer student interns.

We'll Miss You, Rita!

Rita Sosa, our friend and Contamination Control Technician for many years, has retired from Lockheed Martin. Rita, who played a hypercritical role in the Lunar Curatorial Laboratories, spent many years keeping all of us in shape and the laboratories contamination free. Her duties included upkeep of the Lunar Sample Facility (Pristine and Return Sample Laboratories), Meteorite Laboratory, Cosmic Dust and Foils Laboratories, Final Clean Laboratory and others. She also assisted with laboratory tours, film crews and other aspects of curation. Her work has been commended by the NASA management, dignitaries, scientists, coworkers and all who experienced the facilities. Throughout Rita's service, the 25 years at NASA-JSC entailed duties with Johnson Controls, Northrop Services, Inc., Syscom, Inc., as well as Lockheed Martin.

Rita is a loving wife, mother of eight wonderful adult children and grandmother of eleven beautiful children. She also has many step-children and step-grandchildren. She retired to spend more time caring for her husband, Julio who is retired from Southern Pacific Railroad after 39 years of dedicated service as a foreman.

During her "off work" time, Rita is a collector of "elephants", crochets and make photo albums. She and Julio participates in lots of community activities for the betterment of their neighborhood, as well as the city of Houston. They have, many times, accepted children without places to live into their home until they finished school or until they find other residences. They also aid school children by assisting in purchasing school supplies, clothing and food. Training and educating our youth is very important to Rita. She also is considered an angel by the patients in her neighborhood dialysis center. She is certainly a compassionate, charitable humanitarian.

We will miss Rita's smile, wit, and professionalism. She has a way of making you smile and laugh whenever you are in her presence. She says laughter is cleansing for the soul. We hope all the best for Rita and her family in the coming years.

Ed and Merle Cornitius

Another milestone has been made in the lives of our Curatorial personnel. Now, Ed Cornitius has officially entered among the "elitist" who without consideration of a time clock or watch, has "extra" moments for doing "extra" things. After 30 years of service at NASA-JSC, Ed is totally in charge of what he will be doing (except for whatever Merle says).

Ed was born here in Houston. He then began his career in private industry with Northrop Services at JSC (later to become Lockheed Martin). He worked first as a Lunar Sample Processor and has many untold stories of the days of lunar sample return. Later he worked as a Engineer-Supervisor for the Operations Group of the Curatorial Facilities. Some of his duties have included: Laboratory Technician in the Lunar Receiving Laboratories (documented and prepared lunar samples for scientific investigation), Supervisor of the Lunar Laboratories, Supervisor of Operations (maintenance and laboratory operations), Safety Officer and many other.

His expertise and years of knowledge will certainly be missed. Ed and Merle plan on traveling and doing many other things of interest that have been delayed for years. We hope the very best for you both.

Revised: February 1998

How to Request Lunar Samples

NASA policies define lunar samples as a limited national resource and future heritage and require that samples be released only for approved applications in research, education, and public display. To meet that responsibility, NASA carefully screens all sample requests with most of the review processes being focused at the Johnson Space Center (JSC). Individuals requesting a lunar sample should follow the steps given below for the appropriate category of sample.

1. RESEARCH SAMPLES (including thin sections)

NASA provides lunar rock, soil, and regolith-core samples for both destructive and non-destructive analysis in pursuit of new scientific knowledge. Requests are considered for both basic studies in planetary science and applied studies in lunar materials beneficiation and resource utilization.

A. The sample investigator demonstrates favorable scientific peer review of the proposed work involving lunar samples. The required peer review can be demonstrated in either of two ways: (1) A formal research proposal recommended by NASA's Lunar and Planetary Geosciences Review Panel (LPGRP) or an equivalent scientific peer-review panel, within the past three years; (2) Submittal of reprints of scientific articles, as published in peer-reviewed professional journals that directly pertain to the specific sample requested.

B. The investigator submits a written request specifying the numbers, types, and quantities of lunar samples needed as well as the planned use of the samples. For planetary science studies, the sample request should be submitted directly to the Lunar Sample Curator at the following address:

Dr. Gary Lofgren
SN2/Lunar Sample Curator
NASA/Johnson Space Center
Houston, TX 77058-3696
USA
Telephone: (281) 483-6187
Fax: (281) 483-5347

For engineering and resource-utilization studies, the sample request should be submitted to the Lunar Simulant Curator at the following address:

Dr. Douglas W. Ming
SN4/Lunar Simulant Curator
NASA/Johnson Space Center
Houston, TX 77058-3696
USA
Telephone: (281) 483-5839
Fax: (281) 483-5347

The Lunar Simulant Curator will assure that all necessary demonstration tests with simulated lunar materials have been satisfactorily completed. Requests determined to be sufficiently mature to warrant consideration for use of lunar materials will then be forwarded to the Lunar Sample Curator.

For new investigators, tangible evidence of favorable peer review (step A) should be attached to the sample request. Each new investigator should also submit a résumé.

Investigators proposing the application of new analytical methodologies (not previously applied to lunar samples) also should submit test data obtained for simulated lunar materials. New investigators who are not familiar with lunar materials should consult *Lunar Sourcebook: A User's Guide to the Moon* (G. Heiken, D. Vaniman, and B. M. French, Eds.; Cambridge University Press, 736 pp.; 1991; ISBN 0-521-33444-6) as the best available reference on the chemical and physical properties of lunar materials.

Investigators with access to the World Wide Web on the Internet also can find updated information at the following URL: http://www-sn.jsc.nasa.gov/curator/curator.htm. The home page cited above provides links to sample databases and other information of use to sample requestors.

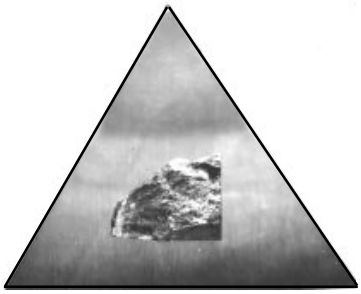
C. The Lunar Sample Curator will research the availability of the requested samples and decide whether a unilateral action can be taken or an outside scientific review is required. Outside review is prescribed for all new investigators and for most established investigators except where returned (previously used) samples are being requested. For outside review, the Curator forwards the original request, with background information, to the Curation and Analysis Planning Team for Extraterrestrial Materials (CAPTEM), a standing committee of scientists who advise NASA on

the care and use of lunar samples. CAPTEM checks for favorable peer review (step A) and appropriate sample selection (step B).

D. Given CAPTEM endorsement and concurrence by NASA Headquarters, the Lunar Sample Curator will prepare a Lunar Sample Loan Agreement for signature by the investigator's institution. The agreement includes a simple security plan that prescribes precautions to minimize prospects for theft or unauthorized use of lunar samples.

E. Upon receipt of the properly executed loan agreement, the Lunar Sample Curator prepares the authorized samples and sends them to the investigator. Quantities less than 10 grams can be sent directly by U. S. registered mail to domestic investigators. Shipments to foreign investigators are sent by U. S. diplomatic pouch mail to the American embassy nearest the requestor's location. Quantities larger than 10 grams must be hand-carried by the investigator or his/her representative.

F. Continuation as a Lunar Sample Investigator. An investigator's privilege for retention and use of lunar samples is contingent upon continued good standing with the Office of the Curator. The investigator will remain in good standing by fulfilling the following obligations: (1) Maintenance of, and adherence to, the lunar sample loan agreement and security plan; (2) Timely cooperation with annual lunar sample inventory; (3) Timely cooperation with sample recalls.



2. PUBLIC DISPLAY SAMPLES

NASA provides for a limited number of rock samples to be used for either short-term and long-term displays at museums, planetariums, expositions, or professional events that are open to the public. Requests for such display samples are administratively handled by the JSC Public Affairs Office (PAO). Requestors located in the United States should apply in writing to the following address:

Mr. Boyd E. Mounce
Lunar Sample Specialist
AP4/Public Services Branch
NASA/Johnson Space Center
Houston, TX 77058-3696
Telephone: (281) 483-8623
Fax: (281) 483-4876

Mr. Mounce will advise successful applicants regarding provisions for receipt, display, and return of the samples. All loans will be preceded by a signed loan agreement executed between NASA and the requestor's organization. Mr. Mounce will coordinate the preparation of new display samples with the Lunar Sample Curator.

3. EDUCATIONAL SAMPLES
(disks and educational thin sections)

A. Disks

Small samples of representative lunar rocks and soils, embedded in rugged acrylic disks suitable for classroom use, are made available for short-term loan to qualified school teachers. Each teacher must become a certified user of the disks through a brief training program prior to receiving a disk. Educational sample disks are distributed on a regional basis from NASA field centers located across the United States. For further details, prospective requestors should contact the nearest NASA facility as follows:

IF YOU LIVE IN:

Alaska	*Nevada*
Arizona	*Oregon*
California	*Utah*
Hawaii	*Washington*
Idaho	*Wyoming*
Montana	

NASA Teacher Resource Center
Mail Stop T12-A
NASA Ames Research Center
Moffett Field, CA 94035-1000
Phone: (415) 604-3574

IF YOU LIVE IN:

Connecticut	*New Hampshire*
Delaware	*New Jersey*
New York	*Maine*
Pennsylvania	*Maryland*
Rhode Island	*Massachusetts*
Vermont	
District of Columbia	

NASA Teacher Resource Laboratory
Mail Code 130.3
NASA Goddard Space Flight Center
Greenbelt, MD 20771-0001
Phone: (301) 286-8570

IF YOU LIVE IN:

Colorado	*North Dakota*
Kansas	*Oklahoma*
Nebraska	*South Dakota*
New Mexico	*Texas*

NASA Teacher Resource Room
Mail Code AP-4
NASA Johnson Space Center
Houston, TX 77058-3696
Phone: (281) 483-8696

IF YOU LIVE IN:
Florida
Georgia
Puerto Rico
Virgin Islands

NASA Educators Resource Laborarory
Mail Code ERL
NASA Kennedy Space Center
Kennedy Space Center, FL 32899-0001
Phone: (407) 867-4090

IF YOU LIVE IN:
Kentucky
North Carolina
South Carolina
Virginia
West Virginia

NASA Teacher Resource Center
for Langley Research Center
Virginia Air and Space Center
600 Settler's Landing Road
Hampton, VA 23669-4033
Phone: (804) 727-0900 x757

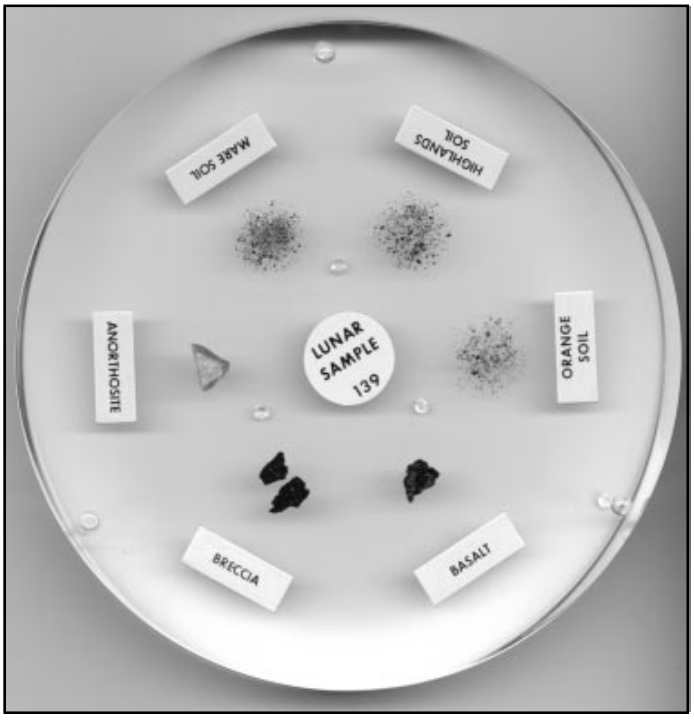
IF YOU LIVE IN:

llinois	*Minnesota*
Indiana	*Ohio*
Michigan	*Wisconsin*

NASA Teacher Resource Center
Mail Stop 8-1
NASA Lewis Research Center
21000 Brookpark Road
Cleveland, OH 44135-3191
Phone: (216) 433-2017

IF YOU LIVE IN:

Alabama	*Louisiana*
Arkansas	*Missouri*
Iowa	*Tennessee*



NASA Teacher Resource Center
for Marshall Space Flight Center
U.S. Space and Rocket Center
P.O. Box 070015
Huntsville, AL 35807-7015
Phone: (205) 544-5812

IF YOU LIVE IN:
Mississippi

NASA Teacher Resource Center
Building 1200
NASA John C. Stennis Space Center
Stennis Space Center, MS 39529-6000
Phone: (601) 688-3338

B. Thin Sections

NASA prepared thin sections of representative lunar rocks on rectangular 1 x 2-inch glass slides, with special safety frames, that are suitable for use in college and university courses in petrology and microscopic petrography for advanced geology students. Each set of 12 slides is accompanied by a sample disk (described above) and teaching materials. The typical loan period is two weeks, including round-trip shipping time. Each requestor must apply in writing, on college or university letterhead, to the following address:

SN2/Lunar Sample Curator
NASA/Johnson Space Center
Houston, TX 77058-3696
Telephone: (281) 483-6187
Fax: (281) 483-5347

For each approved user, the Curator will prepare a loan agreement to be executed between NASA and the requestor's institution prior to shipment of the thin-section package. ❑

Accessing the JSC SN2 Curatorial Databases

The curatorial databases may be accessed as follows:

Via INTERNET	1) Type **TELNET 139.169.126.35** or **TELNET CURATE.JSC.NASA.GOV**. 2) Type **PMPUBLIC** at the USERNAME: prompt.
Via WWW	1) Using a Web browser, such as Netscape, open URL **http://www-curator.jsc.nasa.gov** 2) Activate the ***Curatorial Databases*** link.

For problems or additional information, you may contact: Claire Dardano, Lockheed Martin Space Mission Systems and Services, (281) 483-5329, cdardano@ems.jsc.nasa.gov.

Visit the Curator's home page by opening the URL http://www-curator.jsc.nasa.gov